Remarks

The instant Office Action dated June 5, 2007, indicated that the drawings have been objected to as failing to comply with 37 CFR 1.84 (p)(5), that the specification is objected to for various reasons and listed the following rejections: claims 1-25 stand rejected under 35 U.S C. § 112, first paragraph; claims 1-25 stand rejected under 35 U.S.C. § 112, second paragraph; claims 1, 3-4 ,6-7, 10, 15-18, 20-21 and 23-25 stand rejected under 35 U.S.C. § 103(a) over Zehavi *et al.*(U.S. Patent No. 6,005,855); and claims 5, 12, 14 and 22 stand rejected under 35 U.S.C. § 103(a) over Zehavi in further view of Admitted Prior Art.

Applicant respectfully traverses the objection to the drawings and the Examiner's assertion that "the disclosed advantage of the proposed algorithm is not supported by Fig. 2." 37 CFR 1.84 (p)(5) states that "Reference characters not mentioned in the description shall not appear in the drawings. Reference characters mentioned in the description must appear in the drawings." The Office Action has not identified any reference characters that appear in either the description or the drawings but not in both. Thus, the objection under 37 CFR 1.84 (p)(5) is improper and Applicant requests that it be withdrawn.

Applicant respectfully traverses the objections to the specification, which are labeled a-e in the Office Action. Regarding objection "a", Applicant has amended equation 5 to recite that $R_i \geq R_{min}$. Regarding objection "b", the text in step 2 on page 11 would be clear to one of skill in the art. More specifically, it would be clear that each user's rate is increased, with a given user's rate being increased by ΔR while keeping the rates of the other users constant. Regarding objection "c", the resulting transmit power vector may be determined by the iterative algorithm as discussed in the appendix (Avneesh Agrawal, John M. Cioffi, "Power Control for Multiuser Space-Time CDMA," *GLOBECOM 2002*). Regarding objection "d", the system has multiple users (*i.e.,* a set of users). Regarding objection e, the steps of the algorithm are clearly disclosed on pages 10 and 11 (*i.e.,* steps 1-4). Thus, the steps of the algorithm would be clear to one of skill in the art. In view of the above, the disclosure would be clear to one of skill in the art.

Thus, the objections to the specification are improper and Applicant requests that they be withdrawn.

Applicant respectfully traverses the Section 112(1) rejections of claims 1-25 because the claimed subject matter is described in the specification in such a way as to enable one of skill in the art to make and/or use the invention.

Regarding claims 1, 10, 20, 21 and 25, ways in which to change the transmission rate are well known to those of skill in the art as is evidenced by numerous U.S. patents (*e.g.*, those of record) and texts related to communication systems. *See, e.g.*, Ferrel G. Stremler, Introduction to Communication Systems (3rd ed. 1990).

Regarding claims 1, 10, 20, 21 and 25, Applicant's specification discloses that a resulting transmit power vector may be determined by the iterative algorithm as discussed in the appendix (Avneesh Agrawal, John M. Cioffi, "Power Control for Multiuser Space-Time CDMA," *GLOBECOM 2002*). *See, e.g.*, page 11, lines 3-6 and Section IV of the appendix. Regarding claims 1 and 20, Applicant's specification identifies how to determine the degree of transmission-rate allocation unfairness relative to the transmission rates of all the users (*see, e.g.*, Page 10, equation 4 and lines 22-23). Applicant notes that claim 2 further specifies how to determine the degree of transmission-rate allocation unfairness. Regarding claim 25, one of skill in the art would recognize that a CPU is an example of a clock based circuit. *See, e.g.*, Applicant's Figure 1 and page 8, lines 13-16. In view of the above, Applicant's specification discloses sufficient detail to enable one of skill in the art to make and use the claimed invention. Accordingly, the Section 112(1) rejections of claim 1-25 are improper and Applicant requests that they be withdrawn.

Applicant respectfully traverses each of the Section 112(2) rejections of claims 1-25 because the claims do particularly point out and distinctly claim that which Applicant regards as the invention. Applicant submits that these claims and limitations would be understood by one of skill in the art, and that explicit antecedent basis is not required to satisfy Section 112(2). *See* M.P.E.P. § 2173.05(e). Accordingly, while Applicant appreciates the Examiner's careful review of these claims, Applicant submits these wording (antecedent-basis) issues are at best objectionable. Applicant discusses these issues in more detail below.

Regarding the noted issues with respect to claims 1, 10, 20, 21 and 25 and the limitations directed to a resulting vector of transmit powers, Applicant submits that these limitations would be understood by one of skill in the art. As is consistent with Applicant's specification, for example, a resulting transmit power vector may be determined by the iterative algorithm as discussed in the appendix (Avneesh Agrawal, John M. Cioffi, "Power Control for Multiuser Space-Time CDMA," *GLOBECOM 2002*). *See, e.g.,* page 11, lines 3-6 of Applicant's specification and Section IV of the appendix.

Regarding the noted issues with respect to claims 1 and 20 and the term "the increased transmission rate," Applicant has amended these claims so that the antecedent wording is consistent in the context of "the incremental adjustment of the transmission rate".

Regarding the noted issues with respect to claims 1 and 20 and the term "a degree of transmission-rate allocation unfairness relative to the transmission rates of all the users", Applicant submits that these limitations would be clearly understood by one of skill in the art. As is consistent with Applicant's specification, for example, the Detailed Description section identifies how to determine a degree of transmission-rate allocation unfairness relative to the transmission rates of all the users (*see, e.g.,* Page 10, equation 4 and lines 22-23). Applicant notes that claim 2 further specifies how to determine the degree of transmission-rate allocation unfairness.

Regarding the noted issues with respect to claim 4 and the terms "the set of all users" and "the corresponding iteration", Applicant again notes that explicit antecedent basis is not required. *See* M.P.E.P. § 2173.05(e). Moreover, antecedent for "the set of all users" can be found in claim 1 with "the users" (*i.e.,* multiple users or a set of users), and antecedent for "the corresponding iteration" can also be found in claim one with "iteratively changing the transmission rate of each user" (i.e., the corresponding iteration for a user).

Regarding the noted issues with respect to claims 10 and 21 and the term "for each user, increasing its transmission rate without changing the transmission rate of the other users", Applicant submits that this term is clear in that the transmission rate of a given user is increased while maintaining the transmission rate of the other users.

In view of the above, Applicant respectively submits that the Section 112(2) rejections of claims 1-25 have been addressed and should now be withdrawn.

Applicant respectfully traverses the Section 103(a) rejections because the Zehavi reference is largely unrelated to the claimed invention. More specifically, the cited portions of Zehavi do not correspond to claim limitations directed to incrementally adjusting the transmission rates of the users by iteratively changing the transmission rate of each user. The Zehavi reference is generally directed to assigning overflow channels to a user when the rate of the user's transmission exceeds the capacity of their allocated traffic channel, if an overflow channel is available. *See, e.g.,* Col. 2:66 to Col. 3:25. The cited portions of Zehavi do not teach changing the transmission rates of the users relative to each other, but simply assigning overflow channels based on the user's transmission rate and the availability of the overflow channels. Thus, the cited portions of Zehavi do not teach iteratively changing the transmission rates of each user as in the claimed invention.

Moreover, the cited portions of Zehavi do not correspond to the aspects of the claimed invention directed to changing the transmission rate of each user as a function of a degree of transmission-rate allocation unfairness relative to the transmission rates of all the users. The cited portions of Zehavi teach the "fairness" of the allocation of available overflow channels to active channels (*i.e.,* the active channels are only allowed to use certain pre-assigned overflow channels), thus allowing each active channel fair access to the overflow channels. *See, e.g.,* Col. 21:14 to Col. 22:30. These cited teachings are unrelated to the actual transmission rates of the users of the active channels and do not relate to changing the transmission rate of each user as a function of a degree of transmission-rate allocation unfairness as in the claimed invention. Accordingly, the Section 103(a) rejections are improper and Applicant requests that they be withdrawn.

Applicant traverses the Examiner's taking of Official Notice "that combining a set of values in a vector is well known in the art." According to M.P.E.P. § 2144.03 "It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known." Applicant submits that without

a citation to a prior art reference in support, the Examiner's use of Official Notice in this instance is improper.

Moreover, the Office Action has provided no evidence of motivation to combine the allegedly well known aspects with the Zehavi reference. This approach is contrary to the requirements of Section 103 and relevant law. "A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007). In this instance, the Office Action simply concludes that it would be obvious to add combining transit powers into a vector to the system of Zehavi "to improve the system analysis." *See, e.g.,* page 6 of the Office Action. However, the Office Action has not cited any evidence as to why one of skill in the art would find the asserted combination obvious as required.

Furthermore, Applicant submits that such a generic combination would frustrate the intended purpose and operation of the Zehavi reference. According to M.P.E.P. § 2143.01, if a "proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *See In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984). In view of the above, the Section 103(a) rejections are improper and Applicant requests that they be withdrawn.

In view of the above discussion, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. A favorable response is requested. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is encouraged to contact the undersigned at (651) 686-6633.

Respectfully submitted,

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